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| 10/776,380      | 02/12/2004  | Hideo Nanataki       | 03500.017903        | 3935             |

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EXAMINER

WALSH, RYAN D

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2852

DATE MAILED: 09/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/776,380 | <b>Applicant(s)</b><br>NANATAKI ET AL. |  |
|                              | <b>Examiner</b><br>Ryan D. Walsh     | <b>Art Unit</b><br>2852                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-12, 14, 16, 18, 19 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-24 is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-12, 14, 16, 19 and 25 is/are rejected.
- 7) ☒ Claim(s) 1 6 11 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

Claims 1 and 11 are objected to because of the following informalities:

Regarding claim 1, it appears as though the word "detecting" should be placed between the words "without" and "a surface temperature" at the end of the claim, to coincide with the remarks on pages 11 and 12 of applicants response dated June 23, 2006. Appropriate correction is required.

Regarding claim 11, please replace "and for fixing an image formed on a recording material the recording material in the nip" with the following -- and for fixing an image formed on a recording material, the recording material in the nip-- to include the comma.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawahara et al. (US Pat. # 6,411,785) in view of Sakai et al. (US Pat. # 5,682,576).

Regarding claim 1, Ogawahara et al. teach, "A heating apparatus for heating a material to be heated, the material being inserted in a nip to be nipped and conveyed therein using the heat of a rotary member, said heating apparatus comprising: a rotary

member (51); an opposing member (53) forming nip with respect to said rotary member; a heating member (55) for heating a portion different from the nip in a surface said rotary member; a temperature controller (63) for controlling a temperature of said rotary member heated by said heating member and detecting a surface temperature of said rotary member not at a downstream side of the nip (See position of 62 in Fig. 4)."

Ogawahara et al. do not teach, "wherein said temperature controller raises a temperature of said heating member or increases power supplied to said heating member within one revolution period of said rotary member from and insertion timing of a leading edge of the material to be heated in the nip." However, "wherein said temperature controller raises a temperature of said heating member or increases power supplied to said heating member within one revolution period of said rotary member from and insertion timing of a leading edge of the material to be heated in the nip" is routine in the art as shown by Sakai et al. (see Col. 11, Ln. 1-4 and Col. 12, Ln. 1-5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ogawahara et al. invention to include wherein said temperature controller raises a temperature of said heating member or increases power supplied to said heating member within one revolution period of said rotary member from and insertion timing of a leading edge of the material to be heated in the nip.

The ordinary artisan would have been motivated to modify Ogawahara et al. invention in a manner described above for at least the purpose of providing stable fixability.

Note: The claimed language “without detecting a surface temperature of said rotary member at a downstream side of the nip” is not patentable over the Ogawahara reference because there is no reference point on how far downstream or upstream the sensor may be. The sensor (62) of Ogawahara is clearly upstream of the nip (56) when the external heater (55) is taken as a reference point.

Regarding claim 2, Ogawahara et al. do not teach, “wherein said temperature controller decreases the temperature of said heating member or decreases the power supplied to said heating member before a trailing edge of the material to be heated is completely discharged from the nip.” However, “wherein said temperature control means decreases the temperature of said heating member or decreases the power supplied to said heating member before a trailing edge of the material to be heated is completely discharged from the nip” is routine in the art as shown by Sakai et al. (see Fig. 15 and Col. 11, Ln. 1-4 and Col. 12, Ln. 1-5). It would have been obvious to one ordinary skilled in the art at the time the invention was made to modify Ogawahara et al. invention by decreasing the power supplied to the heating member before a trailing edge of the material is discharged from the nip.

The ordinary artisan would have been motivated to modify Ogawahara et al. invention in a manner described above for at least the purpose of providing stable power usage.

Regarding claim 3, Ogawahara et al. do not teach, “wherein in the case that L assumed as a distance from the nip to the portion of said rotary member surface to be heated by said heating member along a rotating direction of said rotary member, and V

assumed as a tangential speed for rotation of said rotary member, said temperature controller raises the temperature of said heating member or increases the power supplied to said heating member within L/V from an insertion timing of a leading edge of the material to be heated in the nip.” However, “said temperature controller raises the temperature of said heating member or increases the power supplied to said heating member within L/V from an insertion timing of a leading edge of the material to be heated in the nip” is routine in the art as shown by the teaching of Sakai et al. (Col. 11, Ln. 6-8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ogawahara et al. invention by increasing the power to the heating member within L/V (a specific amount of time).

The ordinary artisan would have been motivated to modify Ogawahara et al. invention in a manner described above for at least the purpose of stabilizing fixability over the entire surface of the paper.

Regarding claim 25, Ogawahara et al. teach, “wherein the image forming apparatus is a color image forming apparatus for forming an image having a plurality of color components onto the recording material. (Fig. 3, ref. # 19)

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawahara et al. (US Pat. # 6,411,785) in view of Sakai et al (US Pat. 5,682,576) and in further view of Kagawa et al (US Pat. 6,088,549).

Regarding claim 4, the combination of Ogawahara et al. and Sakai et al teach “A heating apparatus according claim 1,” but fail to teach “wherein said heating member comprises a film and heats a surface said rotary member through said film, and said

temperature controller includes a temperature detector for detecting a temperature of said film.” However, “wherein said heating member comprises a film and heats a surface said rotary member through said film, and said temperature controller includes a temperature detector for detecting a temperature of said film” is routine in the art as shown by the teaching of Kagawa et al. (see Col. 10, Ln. 64-65 and Col. 13, Ln. 14-20). It would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the combination of Ogawahara et al. and Sakai et al. inventions to detect the temperature on a film surface contacting said rotary member.

The ordinary artisan would have been motivated to modify the combination of Ogawahara et al. and Sakai et al. inventions in the manner described above to determine a more precise temperature measurement of the rotary member

Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawahara et al. (US Pat. # 6,411,785) in view of Sakai et al. (US Pat. 5,682,576) and in further view of Hasegawa et al (US Pat. 6,701,102).

Regarding claim 7, the combination of Ogawahara et al. and Sakai et al. teach, “A heating apparatus according to claim 1,” but fail to teach, “wherein said heating member includes a ceramic heater, and wherein said temperature controller includes a temperature detector disposed at a back surface of said ceramic heater.” However, “wherein said heating member includes a ceramic heater, and wherein said temperature controller includes a temperature detector disposed at a back surface of said ceramic heater” is routine in the art as shown by Hasegawa et al. (see Col. 13, Ln. 4-5, 49-52). It would have been obvious to one ordinary skilled in the art at the time the invention was

made to modify the combination of Ogawahara et al. and Sakai et al. to include wherein said heating member includes a ceramic heater, and wherein said temperature controller includes a temperature detector disposed at a back surface of said ceramic heater.

The ordinary artisan would have been motivated to modify the combination of Ogawahara et al. and Sakai et al. in a manner described above to include a heater with low heat capacity and temperature sensing means, resulting in better control.

Regarding claim 8, Ogawahara et al. teach, "wherein said opposing member comprises a rotary member (Col. 10, Ln. 31, roller defines rotary). "

Regarding claim 9, Ogawahara et al. teach, "wherein the material to be heated is a recording material bearing an image (26). "

Regarding claim 10, the combination of Ogawahara et al. and Sakai et al. teach "a fixing apparatus including a heating apparatus according to claim 9," but fail to teach "an image forming apparatus, comprising: an image forming device for forming an unfixed toner image on a recording material." However, "an image forming apparatus, comprising: an image forming device for forming an unfixed toner image on a recording material" is routine in the art as shown by the teaching of Hasegawa et al. (see Col. 6, Ln. 59-63). It would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the combination of Ogawahara et al. and Sakai et al. inventions to include an image forming apparatus, comprising: an image forming device for forming an unfixed toner image on a recording material.



The ordinary artisan would have been motivated to modify the combination of Ogawahara et al. and Sakai et al. inventions in the manner described above to include an image forming apparatus to fix an image on a recording material (paper, transparency, etc.).

Claims 11-12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawahara et al. (US Pat. # 6,411,785) in view of Hasegawa et al. (US Pat. 6,701,102).

Regarding claim 11, Ogawahara et al. teach, "an image forming part (Fig. 3, ref. # 17) for forming an unfixed toner image on a recording material; and a fixing part including a first rotary member (51) and a second rotary member (53) that are in contact with each other to form a nip and a heating member (55) for heating said first rotary member in a heating position different from the nip, and for fixing an image formed on a recording material, the recording material in the nip using heating of said first rotary member and detecting a surface temperature of said first rotary member not at a downstream side of the nip (See position of 62 in Fig. 4)." Ogawahara et al. do not teach, "a power control part for controlling power to be supplied to the heating member so as to increase an amount of heat supplied to said first rotary member substantially at a timing when a portion of said first rotary member contacts a leading edge of the recording material in the nip reaches the heating position." However, Hasegawa et al. teach, "a power control part for controlling power to be supplied to the heating member so as to increase an amount of heat supplied to said first rotary member substantially at a timing when a portion of said first rotary member contacts a leading edge of the

recording material in the nip reaches the heating position (Col. 12, Ln. 51-60).” It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ogawahara et al. invention to include a power control part for controlling power to be supplied to the heating member so as to increase an amount of heat supplied to said first rotary member substantially at a timing when a portion of said first rotary member contacts a leading edge of the recording material in the nip reaches the heating position.

The ordinary artisan would have been motivated to modify Ogawahara et al. invention in a manner described above for at least the purpose of providing stable fixability.

Note: The claimed language “without detecting a surface temperature of said first rotary member at a downstream side of the nip” is not patentable over the Ogawahara reference because there is no reference point on how far downstream or upstream the sensor may be. The sensor (62) of Ogawahara is clearly upstream of the nip (56) when the external heater (55) is taken as a reference point.

Regarding claim 12, Ogawahara et al. teach, “further comprising a temperature detector (70) for detecting temperature of said heating member, wherein said power control part (63) controls power to be supplied to said heating member based on the temperature detected by said temperature detector.

Regarding claim 19, Ogawahara et al. do not teach, “wherein said heating member comprises a ceramic heater and said temperature detector is disposed at a back surface of said ceramic heater.” However, Hasegawa et al. teach, “wherein said

heating member comprises a ceramic heater and said temperature detector is disposed at a back surface of said ceramic heater (Col. 13, Ln. 4-5 & 49-52).” It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ogawahara et al. invention to include wherein said heating member comprises a ceramic heater and said temperature detector is disposed at a back surface of said ceramic heater.

The ordinary artisan would have been motivated to modify Ogawahara et al. in a manner described above to include a heater with low heat capacity and temperature sensing means, resulting in better control.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ogawahara et al. (US Pat. # 6,411,785) and Hasegawa et al. (US Pat. 6,701,102) as applied to claim 11 above, and further in view of Nanbu et al. (JP Pub. 11-194655).

Regarding claim 14, the combination of Ogawahara et al. and Hasegawa et al. do not teach, “wherein substantially at a timing when the position of the heating member reaches a portion of said first rotary member contacts a trailing edge of the recording material in the nip, said power control part controls the power to be supplied to said heating member so as to decrease the amount of heat supplied to said first rotary member.” However, “wherein substantially at a timing when the position of the heating member reaches a portion of said first rotary member contacts a trailing edge of the recording material in the nip, said power control part controls the power to be supplied to said heating member so as to decrease the amount of heat supplied to said first

rotary member” is routine in the art as shown by Nanbu et al. (See claims 7 & 8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Ogawahara et al. and Hasegawa et al. invention to include wherein substantially at a timing when a position said heating member reaches a portion of said first rotary member contacts the leading edge of the recording material in the nip, said power control part performs one of switching the target temperature and switching correlation of the detection temperature for said temperature detecting means and the target temperature with the power to be supplied to said heating member, thereby increasing the amount of heat supplied to said first rotary member.

The ordinary artisan would have been motivated to modify the combination of Ogawahara et al. and Hasegawa et al. invention in a manner described above for at least the purpose of stabilizing fixability over the entire surface of the recording material.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ogawahara et al. (US Pat. # 6,411,785) and Hasegawa et al. (US Pat. 6,701,102) as applied to claim 11 above, and further in view of Kagawa et al (US Pat. 6,088,549).

Regarding claim 16, the combination of Ogawahara et al. and Hasegawa et al. do not teach, “wherein said heating member comprises a film and heats a surface of said first rotary member through said film, and said temperature detector detects a temperature of said film.” However, Kagawa et al. teach the deficiencies of Ogawahara et al. and Hasegawa et al. (see Col. 10, Ln. 64-65 and Col. 13, Ln. 14-20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to

modify the combination of Ogawahara et al. and Hasegawa et al. inventions to include said heating member comprises a film and heats a surface of said first rotary member through said film, and said temperature detector detects a temperature of said film.

The ordinary artisan would have been motivated to modify the combination of Ogawahara et al. and Hasegawa et al. inventions in a manner described above for at least the purpose of determining a more precise temperature measurement of the rotary member.

***Allowable Subject Matter***

Claims 6 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 6 and 18, the prior art does not teach or suggest the claimed, “said temperature detector is disposed in a portion in which said film contacts the surface of said (first) rotary member at a downstream side in a rotating direction of said rotary member.”

Claims 21-24 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 21, the prior art does not teach or suggest the claimed, “temperature detector for detecting temperature of said film of said heating member at an upstream side of a heating portion of said film” in combination with the remaining claim elements.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1 and 11 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Sakai et al. (Col. 12, Ln. 1-5) clearly gives a reason to control the heating of a fixing roller in this way.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

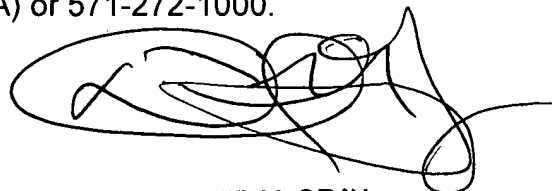
shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan D. Walsh whose telephone number is 571-272-2726. The examiner can normally be reached on M-F 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on 571-272-2119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ryan D. Walsh  
Patent Examiner  
Art Unit 2852

A handwritten signature in black ink, appearing to read 'DAVID M. GRAY', with a long horizontal line extending to the right.

DAVID M. GRAY  
SUPERVISORY PATENT EXAMINER